

REMARKS

This amendment is responsive to the Office Action of August 27, 2007. Reconsideration and allowance of claims 2-15 are requested.

The Office Action

Claims 1-15 stand rejected under 35 U.S.C. § 102 as being anticipated by Nakabayashi (US 5,028,872).

The References of Record

Nakabayashi discloses an RF shield 21, 22, 24. RF eddy currents, such as RF eddy currents induced in a gradient field coil, have frequencies close to the magnetic resonance imaging frequency and can generate RF signals which are received as false imaging data.

The Present Application

The present application is directed to reducing acoustic noise, typically frequencies in the 500 Hz to 2,000 Hz range. Acoustic frequency eddy currents do not generate signals which are received as false magnetic resonance data. However, they can cause acoustic noise which is threatening to the patient, vibrations, or the like.

The Claims Distinguish Patentably Over the References of Record

Claim 2 calls for a perforated eddy current screen which is flexibly connected to the main magnet system. By contrast, the RF screen of Nakabayashi is positioned inside the gradient coils 3-1, 3-2, 3-3. First, it is submitted that the RF screen 21 of Nakabayashi may be mounted in association with the gradient coils, but there is no suggestion in Nakabayashi that it should be mounted to the main magnet. Second, there is no suggestion in Nakabayashi that the RF screen 21 should be flexibly connected. The flexible connection is important for damping acoustic frequency vibrations. However, the Nakabayashi RF screen 21 is designed for radio frequency shielding at or near the resonance frequency.

Because claim 2 sets forth a structure not shown by Nakabayashi, which different structure achieves new and unexpected results, it is submitted that **claim 2 and claims 3 and 7-11 dependent therefrom** distinguish patentably and unobviously over the references of record.

Claim 5 has been placed in independent form. Claim 5 calls for the eddy current shield system to include at least one perforated plate-like layer and at least one perforated visco-elastic layer. The visco-elastic layer is helpful in reducing acoustic vibrations, an issue not addressed by the RF frequency screen **21** of Nakabayashi. Because claim 5 sets forth a different structure from that of Nakabayashi and achieves new and unexpected results, it is submitted that **claim 5 and claims 4 and 6 dependent therefrom** distinguish patentably and unobviously over the references of record.

Claim 12, which has been placed in independent form, calls for the eddy current shield to shield the side faces of a bore-type magnet. By distinction, the RF screen **21** of Nakabayashi lines the bore. Nakabayashi makes no suggestion of placing shields in the region of the side faces of the magnet system. Indeed, it is submitted that RF frequency signals from the RF coils of Nakabayashi are apt to generate very minimal, if any, eddy currents in the side faces of a bore-type magnet system and, if such eddy currents were generated, they would be so remote from the receive coil that they would have a very negligible, if any, impact on the received magnetic resonance data. Accordingly, it is submitted that **claim 12 and claim 13 dependent therefrom** distinguish patentably and unobviously over the references of record.

Claim 14, which has been placed in independent form, calls for placing the eddy current screen between the gradient coils and the main magnet system. By contrast, Nakabayashi places the RF screen **21** between the RF coils and the gradient coils, i.e., on the opposite side of the gradient coils from the main magnet system. Because the strong RF fields from the RF coils **4** of Nakabayashi tend to generate strong RF frequency eddy currents in the gradient coils, it is important that the RF screen **21** of Nakabayashi be placed inside the gradient coils in order to perform its intended function. If the RF screen of Nakabayashi were moved outside the gradient coils, its function of shielding the gradient coils from RF signals would be lost.

Accordingly, it is submitted that **claim 14 and claim 15 dependent therefrom** distinguish patentably and unobviously over the references of record.

Substitute Drawings

The rectangular boxes in Figure 1 have been labeled. A replacement sheet for the first sheet of drawings is enclosed.

CONCLUSION

For the reasons set forth above, it is submitted that claims 2-15 distinguish patentably over the references of record and meet all statutory requirements. An early allowance of all claims is requested.

In the event the Examiner considers personal contact advantageous to the disposition of this case, he is requested to telephone Thomas Kocovsky at (216) 861-5582.

Respectfully submitted,

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